SLUG NEWSLETTER

sinclair LOUISVILLE USERS GROUP

Last meeting on March 9, at the Central Gov't center took up general conversation and congenialty among the members present. Jim Pitts brought in his equipment and the "Shell Game" was demoed. The meeting closed at roughly 9 PM.

The following announcement is self explanatory and is the announcement that was to have been in last months SLUG issue.

```
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
*                                                 March 14, 1988      *
*    announcing.....                                                  *
*                                                                     *
*                THe Timex/Sinclair-Amstrad                           *
*                      Computer Users                                 *
*             1988 MIDWEST Regional Conference                        *
*                                                                     *
*                    August 26 & 27, 1988                             *
*                        Cleveland, Ohio                              *
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *
```

The Greater Cleveland Sinclair Users Group will host the third annual MIDWEST Timex-Sinclair- Amstrad gathering on Saturday and Sunday, August 26 & 27, 1988.

Our theme for this event is; "Users - learning from other Users" - of ZXs, 2068s, Spectrums, QLs, and Amstrad PCs and PCWs.

Displays, demonstrations, and presentations by Individuals, User Groups, Software Authors, Hardware Developers, and Vendors will be emphasized.

The assembly will be held at the "Beck Center for the Arts", a Cultural Arts complex in Lakewood, Ohio, a western suburb of Cleveland. The "Armory" building has been reserved for the two days. Depending on response, we may also book space in the Arts and Theatre building. This is not a hotel site, attendees will need their own in town transportation.

We are now seeking volunteers for seminar type presentations, and are asking Users Groups and Vendors to to participate in co-sponsering the event. A Co-Sponser is any one who books and pays for a $25.00 exhibit table(s) now. Co-sponsers funds will be used to support Conference publicity. Use the registration form provided here.

Direct other inquiries to: Andy Kosiorek, president, Cleve. Sinclair UG on Compuserve at ID # 75046,3420, on Cleveland Freenet BBS, (216- 368-3888), at ID #aa236, or c/o the SYSOP, on Timelines T/S BBS, (216-671-6922 10PM to 6AM-EST). Or you can write to the Greater Cleveland Sinclair Users Group c/o 2192 Glenbury Ave. Lakewood, Ohio, 44107.

Reserve the dates on your calender now!
Additional details will be posted here as plans are developed.

- -

President	JIM PITTS	Editor	SHAWN MERRICK
Secretary	BOB CRECCO	Librarian	ED RADTKE
Treasurer	JOHN HAMILTION	Public Realtions	RAY MANLEY

- -

1988 MIDWEST REGIONAL TIMEX-SINCLAIR-AMSTRAD CONFERENCE

PRESENTERS AND CO-SPONSERS REGISTRATION:

___ I volunteer to make a conference presentation or demonstration.
My proposed topic(s) are:_____

_____

_____

___ Our Organization wishes to participate as a Co-Sponser of the Conference. Enclosed is our check for $_____ for _____ exhibit table(s).

Terms: All tables (8' x 30") are $25.00 each.
Checks must accompany reservation.
Make checks payable to "The Greater Cleveland Sinclair Users Group."

Mail this form to:
The Greater Cleveland Sinclair Users Group
c/o A. Kosiorek, 2192 Glenbury Avenue
Lakewood, Ohio 44107

- -

If the SLUG group decides to participate, we need to use the above form to reserve a table for our equipment and users who wish to attend. Let's give this some thought and discussion during tonites meeting. It is all for the betterment of our Sinclair computers and the programs that they run. I will bring my equipment along if the group decides to go.

Bob Crecco, Secretary

SMUG BYTES

"SQ" NOTES

BY R.A.HILSMANN

Ever wonder what some of the intended functions for some of the keywords on your computer were? Like the MOVE, ERASE, CAT and FORMAT keys. Well when TIMEX came out with the 2068, there were some peripherals in the planing stage. Some were available before Timex bailed out of the computer market, like the 2020 Cassette Recorder or the 2090 so called Command Stick. Almost ready, but finally marketed by Westridge, was the 2050 Telecommunications Modem, advertised as being compatible with all Timex Sinclair computers, it was also suspose to have modem to modem communication capability!
Finally, for June 1984 there were the 2060 System Expansion Unit, the 2065 Microdrive Storage Unit and the 2080 Printer, to be released.

Lets talk about the 2060 System Expansion Unit, since most of us are familiar with what a Centronics Type printer and also a Micro Drive Unit will do.

TS 2060 SYSTEM EXPANSION UNIT

(great, what ever happened to the proto type model, or was it never implemented? Someone out there either has it or it wound up in a dumpster. It may be that Timex was waiting for delivery by Sinclair, which is what I believe, since it took Sinclair quit a while to get the INTERFACE I on the market.) Well lets not dwell on something that could have been, lets talk about what the 2060 Expansion Unit was planed to be.

It was to allow expansion of the TS 2068 computer system (expansion of memory to 16 megabytes, by means of bank switching), have a standard Centronics parallel interface, RS 232 interface with selectable baud rate, 80 or 64 column, high resolution, monochrome composite vidio output, standard RGB vidio output, Interface and controller for up to 8 TS 2065 Microdrives, Local area network capability, CP/M mode with optional 32K additional Ram, and finally it was to have an Auxiliary level audio output on a 1/4" phono jack.

Very impressive, but!! The closest thing I came across that would implement some of those features is the Interface I.

Now let me talk about some of the keys and what each would have done if this interface would have reached the market. There are a few features I can not cover, since not even Timex had an idea on how to take care of them at the time.
There were some software modules covering the 80, 64 and 40 column display in the works and almost completed when Timex quit, but the rest, like the CP/M mode, was only talked about. All this was to go into what was called The Extended Basic Module.

Here are the planed extensions and additions to the basic already in the 2068 rom.

STREAMS

Streams, specified as # n where n is a number in the range of 0-15. Streams 0, 1, 2 and 3 are already used by the present basic. The # Chr$ is part of the keyword for the OPEN# and CLOSE# statements.

CHANNELS

Seven types of channels were to be covered in the extended basic; the (K)Keyboard, (S)Screen, (P)Printer, (T)Text RS232 (ASCII), (B)Binary RS232, (N)Network and (M)Microdrive

Each channel specified by its letter. The Network and Microdrive channel would have required additional information to specify the channel completely.

A network channel would need a station number in addition to the "n", specified as "n",x where x is the station number in the range of 0-64.

A microdrive channel would have

required a drive number and a file name, a microdrive channel would be specified as "m",y,"name", y would be the drive number in the range of 1-8.

STATEMENTS:

CAT y - would have given a list of all files in drive y including the cartridge name followed by the bytes remaining on the cartridge in (k) kilobytes.

CAT# z,y - would have send the catalog of the cartridge in drive y to stream z.

CLOSE# stream - will close any channel from the specified stream. Any buffered data is then send to the linked stream.

ERASE "m",y,"name" - would erase the file with the specified name from drive y.

FORMAT "m",y,"name" - would format a cartridge for use. The name would be given to the cartridge and would appear in cataloges.

FORMAT "n",x - would have set the network station number to x.

FORMAT "t",x or "b",x - would have set the baud rate for the RS232 interface to x, x would have been any of 50, 110, 300, 600, 1200, 2400, 4800, 9600, 19200.

INKEY$# stream - would have returned a single chr$ as a string from stream "t" or "n".

INPUT# stream,variable - would have input the variable from a specified opened stream.

LOAD* channel - would have loaded a program, data or code from the specified channel "b", "n" or "m".

MERGE* channel - would have loaded as the usual Merge function.

MOVE source TO destination - would have moved data from the source to the destination. The source or destination could have been either streams or channels. The command would terminate when an end of file marker would be encountered when a microdrive or network channel or else a stream was linked to one. Channels would have to be opened and closed.

OPEN# stream,channel - will link the specified channel to the specified stream, this can be done presently with channels "p", "k" or "s".

PRINT# stream - outputs the print sequence to the specified stream. The stream must previously have been opened to a channel.

SAVE* channel - would have saved a program, data or code to the specified channel. Only channels "b", "n", or "m" could have been used.

VERIFY* channel - would have been the same as load*, except that data would be compared not loaded.

****

Big deal you may say, but what does information like that do for me now! Well some of the commands will work to some extend on your computer, and this may be of help to you. On the next page I will give you the system variables set up by the spectrum computer when implementing the Interface I, how TIMEX would have accomplished this is a question we can only speculate on.

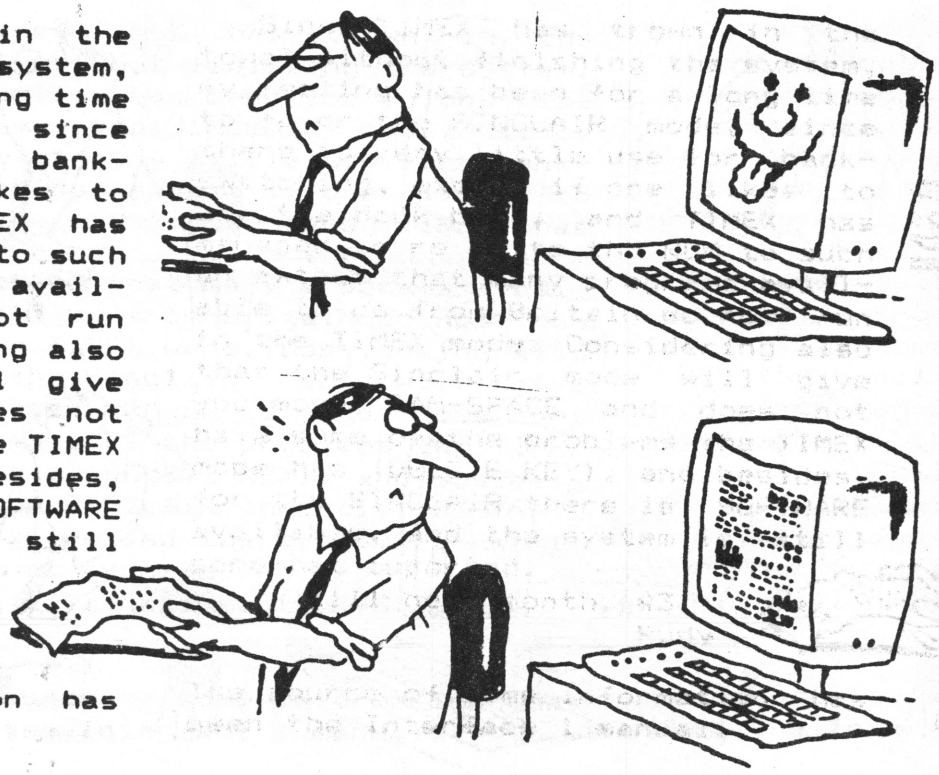
Spectrum verses Timex mode!! Should we even argue about this? I think not, since both are available to us. The 2068 would have been far superior to the Spectrum if Timex would not have trown in the towel, or would have done so after the system was complete.

NOTES	ADDRESS	NAME	CONTENTS
X1	23734	FLAGS3	More flags
X2	23735	VECTOR	Address used to extend BASIC interpreter
X10	23737	SBRT	ROM paging subroutine. (10 bytes)
2	23747	BAUD	Two bytes determining the baud rate (RS232)
1	23749	NTSTAT	Network station number. (Your own)
1	23750	IOBORD	Border color used during I/O. (Poke any color)
N2	23751	SER_FL	2 byte workspace used by RS232.
N2	23753	SECTOR	2 byte workspace used by Microdrive.
N2	23755	CHADD_	Temporary store for CH ADD. (23645)
1	23757	NTRESP	Store for network response code.
1	23758	NTDEST	Destination station #. (start network buffer)
1	23759	NTSRCE	Source station number.
X2	23760	NTNUMB	Network block number. (0-65535)
N1	23762	NTTYPE	Header type code. (Network)
N1	23763	NTLEN	Packet data block length. (0-255)
N1	23764	NTDCS	Packet data block checksum. (# data-bytes send)
N1	23765	NTHCS	Header block checksum.
N2	23766	D_STR1	2 byte drive number. (strt 8 byte file)
N1	23768	S_STR1	Stream number. (0-15)
N1	23769	L_STR1	Device type. ("m","n","t","b")
N2	23770	N_STR1	Length of filename.
N2	23772		Start of filename.
N8	23774	D_STR2	File specifier, (8 bytes) used by MOVE & LOAD.
N1	23782	HD_00	Start of workspace. (SAVE, LOAD, VERIFY, MERGE)
N2	23783	HD_0B	Length of data, 0-65535. (Microdrive)
N2	23785	HD_0D	Start of data, 0-65353.
N2	23787	HD_0F	Program length, 0-65353.
N2	23789	HD_11	Line number.
1	23791	COPIES	Number of copies made by SAVE.
	23792		Start of Microdrive MAPs or CHANS.

Since TIMEX has trown in the towel without finishing the system, my feeling has been for a long time to favor the SINCLAIR mode, since there is very little use for bank-switching, except if one likes to use the dock bank, and TIMEX has managed to re write the ROM to such an extend that many programs available to us from Britain do not run in the TIMEX mode. Considering also that the Sinclair mode will give you more RAM-SPACE and does not have some of the problems the TIMEX mode has (DELETE KEY), and besides, for the SINCLAIR there is SOFTWARE available, and the system is still somewhat suported.

till next month, #3

Rudy



The source of some information has been the Interface 1 manual.

MAKING CONTACT WITH SLUG

PRESIDENT
Jim Pitts
1434 Goddard Ave.
Louisville, KY.
40204
(502)459-5804

LIBRARIAN
ED Radtke
1602 Woodluck Ave.
Louisville, KY.
40205
(502)458-7324

SECRETARY
Bob Crecco
1627 Dewey St.
New Albany, IN.
47150
(812)948-1414

PUBLIC REALTIONS
Ray Manley
1656 Summit Ave.
New Albany, IN.
47150

EDITOR
Shawn Merrick
6413 Brisco Ln.
Louisville, KY.
40228
(502)968-5439

N/L EXCHANGE
S.L.U.G.
4122 Wallingford Ln.
Louisville, KY.
40218 2364

****

APRIL

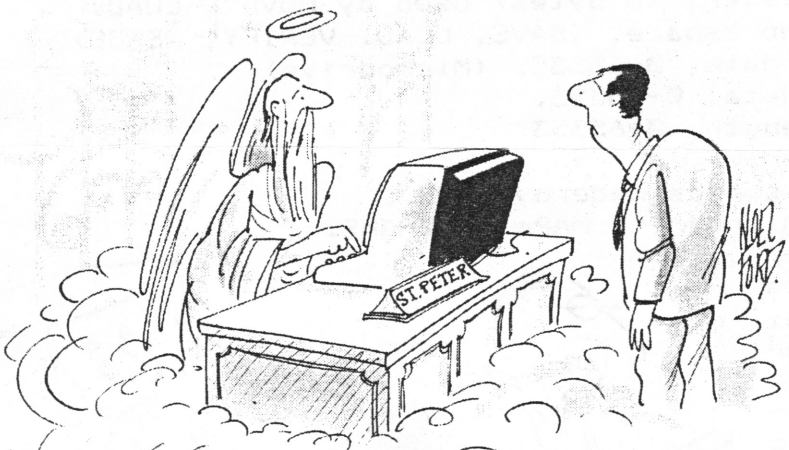
SU	MO	TU	WE	TH	FR	SA
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

****

MAY

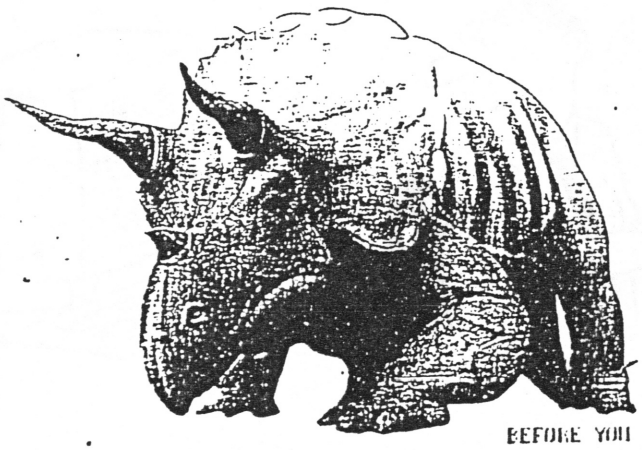
SU	MO	TU	WE	TH	FR	SA
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

****



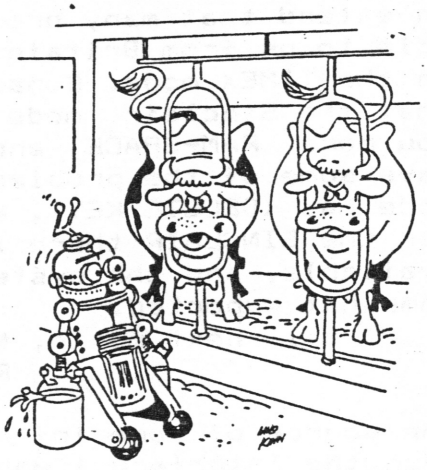
'Sorry—we've only just started using these things, and you're a programming error.'

DON'T BE A BONEHEAD



SUPPORT YOUR USER GROUP

BEFORE YOU BECOME EXTINCT



"He does a good job, but his hands are so cold!"

The ADAM Scene, April 1988
by Shawn M. Merrick

Test "Driving" the ORPHANWARE Disk Upgrade

"At a glance..."

The Coleco ADAM disk drive offers 160K storage at a fast 0.4484 seconds per block access. If you can find a new drive, the going price remains at $200 due to high demand. Armed with less than $0.70, you can purchase a high quality 5.25 inch diskette complete with 200 year or lifetime warranty (whichever comes first)!

The ORPHANWARE disk drive upgrade offers 720K storage with a reasonable speed of 0.6456 seconds per block. The current price is $175 plus shipping, and your Coleco drive. Growing popularity of the 3.5 inch diskettes has made them available for $1.70 each.

"The dilemma..."

Many ADAM users are very fond of the Coleco 160K drive. Unfortunately, there comes a point where you have too many diskettes piling up, or a program requires more storage on a single drive. The latter is VERY obvious with datapack games (256K tapes) where the program is spaced-out and purposefully written to access blocks over #159. Some powerful CP/M programs also require more disk K's. What do you do?

"The logics..."

I don't think there was a single reason for my ORPHANWARE purchase. Though I was getting tired of drooling while thing about a 720K drive. I did a little math and discovered this:

One Coleco drive, 160K * 1 = 160K @ $200

720/160 = 4.5 times storage
4.5 * $200 = $900

Coleco price plus ORPHANWARE upgrade, $375

Compare actual to theoretical:
$375 < $900 WOW! DROOL! WHERE'S MY CHECKBOOK??

Of course that didn't account for the higher cost of 3.5 inch diskettes, but there are certainly other benefits which offset that too. Two or three weeks later, I had my new drive.

"Takin' her for a spin..."

In actual use, you will find a lot of interesting things. ORPHANWARE uses a Toshiba 3.5 inch drive, which apparently is slightly slower in most situations than a regular Coleco drive. The block speed is still faster than datapack tapes, and quite acceptable. The old Coleco drive generates a lot of heat, even if idle. While the ORPHANWARE drive is active, it generates only "half" the heat!

ADAM EOS

Most Coleco software will support the 720K drive completely. It seems that Coleco planned for drives over 256K in the operating system, but some of their programs (i.e. Disk Manager) only use the low byte of the free space. Since Coleco's biggest drive was 256K, why bother to check the high byte for space over that? I using those programs for storing or copying files to the 720K, since they are likely goof with remaining free space.

There are some programs that properly use free space. In fact, there is great pleasure in loading SmartBASIC, and getting a catalog of the 720K drive. It proudly declares "713 Blocks Free". Six blocks are reserved for the directory, and one for the boot block. I did notice a small mistake in the special format program (incl.), which I easily corrected. The next available block (after directory) should be #7. Instead, the format made it #6, so I patch that byte after each format. I also contacted the author and he explained that the program itself was originally written for the double-sided drives, and had been quickly modified for the quad density (720K). I hear a new version will be forthcoming, and is probably already available.

CP/M

Setting up CP/M for 720K requires 2 programs, the new CP/M format program (FORMAT13.COM), and the bios patch (ABPxx.COM). The bios patch makes several corrections in the original CP/M bugs, and also sets the Ramdisk up for 61K (instead of 55K) on a 64K expander. In CP/M, the files require an even amount of K storage. For example, a 1K becomes 2K. When the file is copied to another drive, it returns to normal size.

If you use NEWCCP which has enhanced features, the filesize does not display correctly. Programs like D.COM or even STAT.COM (incl. w/ ADAM CP/M) will give accurate filesizes. I am looking into the source code, but the author said he has a working version which he never got around to distributing. His TDOS (requiring 80 column monitor) is written for the bigger drive. By the way, Tony Morehen of Canada wrote most of the utilities for ORPHANWARE hardware, and NEWCCP too. He has donated a lot to the ADAM community.

"The summary..." (clever, huh?)

The ORPHANWARE 720K upgrade is well-worth the price. It offers a lot of storage on a single drive, and only a slight decrease in read/write speed is noticeable. Many programs for the drive and other ORPHANWARE products are included on the two diskettes (5.25) they include. It is recommended that you know someone with a 5.25 drive if you don't have a second one. If not for the utilities alone, you are likely to find regular 5.25 format as the only one usergroups and mail order offer. Copying the 5.25 to a 3.5 is not difficult among the many programs that do that. ORPHANWARE does sell QUICKOPY v4.0 which will do this well. If you need more than 720K, remember there is always the 1.4 megabyte upgrade too! I'm not sure of the price for it.

Frequency-Inductance-Capacitance a Utility Program

This program is for electronics enthusiasts, especially those who build radio or video circuitry. I use this program whenever I must design a tuned circuit for one of my projects. The program is mostly basic with the exception of a partial screen clear routine which you must poke into a 1 REM line. The routine was explained in an earlier issue. It is only 6 bytes long. Type in 1 REM ......<ENTER>, then poke in the bytes in the table below.

If anyone would like to buy an enhanced version of the program from me, send me 5 dollars and a self addressed cassette mailer.

Jim Pitts
1434 Goddard Ave.
Louisville, KY 40204

Table

ADDRESS	VALUE
16514	6
16515	13
16516	205
16517	44
16518	10
16519	201

```
  1 REM ▄"$LN G""TAN .
 90 LET F$="FT23 00248000800189
003960FT37 00553001770420008840F
T50 00688002200523011000FT82 007
330023505570117 20FT1140079300254
0764016080"
 100 LET S$="T30-2  4.3T50-2  5.
0T68-2  5.7T80-2  5.5T94-2  8.4T
106-213.5T130-211.0T184-224.0T20
0-212.0T25-6  2.7T37-6  3.0T50-6
  4.0T68-6  4.7T80-6  4.5T94-6
7.0T106-611.6T184-619.5T200-610.
5"
 110 CLS
 115 SLOW
 120 PRINT "▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒
▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒"
 130 PRINT
 140 PRINT "1) RESONANT FREQ L/C
"
 150 PRINT "2) TABULATE FREQ GIV
EN L AND C "
 160 PRINT "3) AIR WOUND COIL DE
SIGN"
 170 PRINT "4) IRON CORE TOROID
COIL DESIGN"
 180 PRINT "5) FERRITE TOROID CO
IL DESIGN"
 190 PRINT "6) CALCULATE SECONDA
RY IMPEDANCE"
 240 INPUT M
 260 LET M=1000+M*1000
 265 CLS
 270 GOTO M
1000 REM PRINT TLIST
1010 FOR I=1 TO 18
1020 LET T$=S$(I*10-9 TO I*10)
1030 PRINT T$(1 TO 6);" ";T$(7 T
O 10),
1040 NEXT I
1050 RETURN
1100 REM PRINT FLIST
1110 PRINT "CORE   MIX   MIX   M
IX   MIX"
1120 PRINT "SIZE    61    63
43    72"
1130 PRINT "-----+-----+-----+--
---+-------"
1140 FOR I=1 TO 5
1150 LET T$=F$(I*25-24 TO I*25)
1160 PRINT T$(1 TO 5);TAB 7;VAL
T$(6 TO 10);TAB 13;VAL T$(11 TO
15);TAB 19;VAL T$(16 TO 20);TAB
25;VAL T$(21 TO 25)
1170 NEXT I
1180 PRINT
1190 PRINT "     MICROHENRIES PE
R 100 TURNS"
1200 RETURN
2000 PRINT "▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒
▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒"
2001 PRINT "1) FIND FREQ. OF KNO
WN L AND C"
2002 PRINT "2) FIND C WHEN FREQ
AND L KNOWN"
2003 PRINT "3) FIND L WHEN FREQ
AND C KNOWN"
2004 INPUT T
2005 IF T=2 THEN GOTO 2200
2006 IF T=3 THEN GOTO 2400
2008 CLS
2009 PRINT "▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒
▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒"
2010 PRINT
2020 PRINT "CAPACITANCE (MMF) =
";
2040 INPUT C
2050 PRINT C
2060 PRINT "INDUCTANCE (UH) = ";
2070 INPUT L
2080 PRINT L
2090 LET F=1000000/(2*PI*(SQR (L
*C)))
2100 PRINT "FREQUENCY IN KHZ = "
;F
2110 GOTO 9500
2200 CLS
2210 PRINT "▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒
▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒"
2220 PRINT
2230 PRINT "FREQUENCY IN KHZ = "
;
2240 INPUT F
2245 PRINT F
2250 PRINT "INDUCTANCE (UH) = ";
2260 INPUT L
2265 PRINT L
2270 LET C=((10E5/(F*2*PI))**2/L
)
```

```
2280 PRINT "CAPACITANCE (MMF) =
";C
2290 GOTO 9500
2400 CLS
2410 PRINT "[illegible]"
2420 PRINT
2430 PRINT "FREQUENCY IN KHZ = "
;
2440 INPUT F
2450 PRINT F
2460 PRINT "CAPACITANCE (MMF) =
";
2470 INPUT C
2475 PRINT C
2480 LET L=((10E5/(F*2*PI))**2/C
)
2490 PRINT "INDUCTANCE (UH) = ";
L
2500 GOTO 9500
3000 PRINT "1) FIXED C / VARIABL
E L"
3010 PRINT "2) FIXED L / VARIABL
E C"
3020 INPUT T
3030 IF T<1 OR T>2 THEN GOTO 302
0
3040 CLS
3050 PRINT AT 14,0;
3100 IF T=2 THEN GOTO 3400
3102 PRINT "CAPACITANCE (MMF) =
";
3105 INPUT C
3107 PRINT C
3110 PRINT "MAX INDUCTANCE (UH)
= ";
3115 INPUT LMAX
3117 PRINT LMAX
3120 PRINT "MIN INDUCTANCE (UH)
= ";
3125 INPUT LMIN
3327 PRINT LMIN
3336 PRINT AT 0,0;"  KHZ
    UH"
3338 LET S=(LMAX-LMIN)/10
3340 FOR G=LMIN  TO LMAX STEP S
3344 LET FG=INT (10E5/(2*PI*(SQR
 (G*C))))
3346 PRINT FG,G
3348 NEXT G
3350 GOTO 9500
3400 PRINT "INDUCTANCE  (UH) = "
;
3405 INPUT L
3410 PRINT L
3415 PRINT "MAX CAPACITANCE (MMF
) = ";
3420 INPUT CMAX
3425 PRINT CMAX
3430 PRINT "MIN CAPACITANCE (MMF
) = ";
3435 INPUT CMIN
3440 PRINT CMIN
3445 PRINT AT 0,0;"  KHZ
   UH"
3450 LET S=INT ((CMAX-CMIN)/10)
3455 FOR G=CMIN  TO CMAX STEP S
3460 LET FG=INT (10E5/(2*PI*(SQR
 (G*L))))
3465 PRINT FG,G
3470 NEXT G
3480 GOTO 9500
4000 PRINT "[illegible]"
4010 PRINT "1) FIND INDUCTANCE O
F COIL"
4020 PRINT "2) TURNS FOR GIVEN I
NDUCTANCE"
4030 INPUT T
4040 IF T<1 OR T>2 THEN GOTO 403
0
4045 CLS
4050 GOTO 4000+200*T
4200 PRINT "CALCULATE INDUCTANCE
 OF COIL"
4210 PRINT
4220 PRINT "NUMBER OF TURNS = ";
4230 INPUT N
4235 PRINT N
4240 PRINT "RADIUS IN INCHES = "
;
4250 INPUT A
4255 PRINT A
4260 PRINT "LENGTH IN INCHES = "
;
4270 INPUT B
4275 PRINT B
4280 LET L=(N*A)**2/(9*A+10*B)
4290 PRINT "INDUCTANCE IN UH = "
;L
4300 GOTO 9500
4400 PRINT "CALCULATE NUMBER OF
TURNS"
4410 PRINT
4420 PRINT "RADIUS IN INCHES = "
;
4430 INPUT A
4435 PRINT A
4440 PRINT "LENGTH IN INCHES = "
;
4450 INPUT B
4455 PRINT B
4460 PRINT "DESIRED INDUCTANCE (
UH) = ";
4470 INPUT L
4475 PRINT L
4480 LET N=(SQR (L*(9*A+10*B)))/
A
4485 PRINT
4490 PRINT "NUMBER OF TURNS = ";
N
4495 GOTO 9500
5000 PRINT "[illegible]"
5010 PRINT
5020 PRINT " TYPE   K"," TYPE
K"
5030 GOSUB 1000
5040 PRINT
5045 PRINT
5050 PRINT "K = NANOHENRIES/TURN
 SQUARED"
5055 PRINT
5060 PRINT "CORE TYPE = ";
5070 INPUT C$
5080 FOR I=1 TO 18
5090 LET T$=S$(I*10-9 TO I*10)
5100 IF T$(1 TO LEN C$)=C$ THEN
GOTO 5120
5105 NEXT I
5110 GOTO 5070
5120 LET K=VAL T$(LEN C$+1 TO LE
N T$)
5130 PRINT C$
5140 PRINT "DESIRED INDUCTANCE (
UH) = ";
5150 INPUT L
5155 PRINT L
5160 LET T=SQR ((L*1000)/K)
5170 PRINT "NUMBER OF TURNS = ";
T
5180 GOTO 9500
6000 PRINT "[illegible]"
6010 GOSUB 1100
6112 PRINT
6120 PRINT "1) REACTANCE CALCULA
TION"
6130 PRINT "2) INDUCTANCE CALCUL
ATION"
6140 INPUT V
6150 IF V<0 OR V>2 THEN GOTO 614
0
```

```
6160 RAND USR 16514
6170 IF V=2 THEN GOTO 6500
6180 PRINT "FREQUENCY (KHZ) = ";
6190 INPUT F
6200 PRINT F
6210 PRINT "DESIRED REACTANCE (O
HMS) ";
6220 INPUT X
6230 PRINT X
6240 LET L=X/((2*PI*F))*1000
6250 PRINT "INDUCTANCE (UH) = ";
L
6260 GOTO 6530
6500 PRINT "DESIRED INDUCTANCE (
UH) = ";
6510 INPUT L
6520 PRINT L
6530 PRINT "CORE-MIX = ";
6540 INPUT C$
6550 FOR I=1 TO 5
6560 LET T$=F$(I*25-24 TO I*25)
6570 IF T$(1 TO LEN C$-3)=C$(1 T
O LEN C$-3) THEN GOTO 6620
6580 NEXT I
6590 GOTO 6540
6620 PRINT C$
6630 LET MIX=VAL C$(LEN C$-1 TO
LEN C$)
6640 IF MIX=61 THEN LET I=6
6650 IF MIX=63 THEN LET I=11
6660 IF MIX=43 THEN LET I=16
6670 IF MIX=72 THEN LET I=21
6680 LET U=VAL T$(I TO I+4)
6690 PRINT "U = ";U
6700 LET T=100*SQR (L/U)
6710 PRINT "NUMBER OF TURNS = ";
T
6720 GOTO 9500
7000 PRINT "[redacted]
[redacted]"
7010 PRINT
7020 PRINT "PRIMARY TURNS = ";
7030 INPUT PT
7040 PRINT PT
7050 PRINT "PRIMARY IMPEDANCE (O
HMS) = ";
7060 INPUT PZ
7070 PRINT PZ
7080 PRINT "DESIRED SECONDARY Z
= ";
7090 INPUT SZ
7100 PRINT SZ
7110 IF PZ<SZ THEN GOTO 7300
7120 PRINT "** STEP DOWN TRANSFO
RMER **"
7130 LET Z=PZ/SZ
7140 LET TR=SQR Z
7150 LET ST=PT/TR
7160 PRINT "SECONDARY TURNS = ";
ST
7170 GOTO 9500
7300 PRINT " ** STEP UP TRANSFOR
MER **"
7310 LET Z=SZ/PZ
7320 LET TR=SQR Z
7340 LET ST=TR*PT
7350 GOTO 7160
9500 PRINT AT 20,0;"  C=COPY  A=
ANOTHER  M=MENU"
9510 IF INKEY$="" THEN GOTO 9510
9520 IF INKEY$="C" THEN COPY
9525 IF INKEY$="A" AND M=6000 TH
EN GOTO 6160
9530 IF INKEY$="A" THEN GOTO 265
9540 IF INKEY$="M" THEN GOTO 110
9550 GOTO 9510
```

PREZ'S NOTES

I've been BUSY. So busy in fact that I haven't had a lot of time for computing. Most of my little free time has been devoted to my amateur radio astronomy project. If any of you would like an additional hobby, radio astronomy can suck up as much time as any of them. What we do is build recieving systems and antennas and monitor noise. Thats right! NOISE! Actually we are mostly interested in noise that originates from extra-terrestrial sources, exploding galaxies or stars, black holes, and yes little green men. The complexity of the effort is just like computing. If you want to get into it a big way it can be quite complex, however, there are many simple projects you can perform that are quite satisfying, like listening for solar flares or Jupiters eery emissions. If it sounds interesting drop me a line and I will be glad to help you get started. Actually, much of my radio astronomy time is spent right here at the computer keyboard. The computer is ideal for collecting data, locating points in the sky, identifying sources, even steering the antenna. Expect to see a big radio astronomy program here in the SLUG newsletter sometime in the future.

R.L.Humphreys our well known Canadian friend sent me some great programs in response to a recent plea I made in this column. Of special interest is a program from Australia which copies RTTY, MORSE CODE, and even SLOW SCAN TELEVISION on the 2068 with a Spectrum ROM. WE looked at the program a bit in our last meeting and I hope we can process some of each of these signals through it in our next meeting. All inputs are taken in through the audio port! I do not have a spectrum ROM so I am now in the market for one so that I may use this professional quality program. I don't know how we are going to distribute it, but I know the demand for the program will be great from all of those hams out there who have been waiting so long for a program of this type. I don't want to infringe on the rights of the person who wrote the program.

I guess we all know now that Ed Radtke purchased a complete ADAM computer system at the Indianapolis Hamfest. HOW come I never get deals like you do, Ed? Good luck with your new toy.

I am studying for my GRE test so I will have to cut this short. I want to thank everyone who has responded to my suggestions and requests. BOTH of YOU. Keep those letters trickling in.

JIM PITTS

S.L.U.G.
4122 Wallingford Ln.
Louisville, Ky.
40218 2365
USA

LOUISVILLE, KY 402
PM
APR 9
1988

EMPLOYEES INVOLVED
TO PROVIDE
Domestic USA
FIRST CLASS SERVICE

DON LAMBERT
3310 Clover Dr. S.W.
CEDAR RAPIDS, IOWA
52404